

Notice of Allowability

Application No.

10/713,073

Examiner

Roberts Culbert

Applicant(s)

SILVERBROOK, KIA

Art Unit

1763

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to the amendment and terminal disclaimer filed 1/26/06.
2. ☒ The allowed claim(s) is/are 1-6.
3. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some* c) ☐ None of the:
- ☐ Certified copies of the priority documents have been received.
 - ☒ Certified copies of the priority documents have been received in Application No. 09/425,418.
 - ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
- (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
- 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
- (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

- ☐ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☒ Information Disclosure Statements (PTO-1449 or PTO/SB/08), Paper No./Mail Date 1/26/06
- ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Interview Summary (PTO-413), Paper No./Mail Date _____
- ☐ Examiner's Amendment/Comment
- ☒ Examiner's Statement of Reasons for Allowance
- ☐ Other _____

Terminal Disclaimer

The terminal disclaimer filed on 1/26/06 disclaiming the terminal portion of any patent granted on this application which would extend beyond the expiration date of 11/165,062 has been reviewed and is accepted. The terminal disclaimer has been recorded.

Allowable Subject Matter

Claims 1-6 are allowed.

The following is an examiner's statement of reasons for allowance: the prior art of record fails to teach or render obvious a method of method of fabricating an inkjet printhead chip having a substrate that incorporates drive circuitry, a plurality of nozzle arrangements that are positioned on the substrate, each nozzle arrangement having a nozzle chamber wall and a roof wall positioned on the substrate to define a nozzle chamber, the roof wall defining an ink ejection port in fluid communication with the nozzle chamber, an ink ejection member that is positioned in the nozzle chamber and is displaceable towards and away from the ink ejection port to eject ink from the ink ejection port and an elongate actuator that is fast, at one end, to the substrate to receive an electrical signal from the drive circuitry and fast, at an opposite end, with the ink ejection member, the actuator incorporating a heating circuit that is connected to the drive circuitry layer, the heating circuit being positioned and configured so that, on receipt of, and termination of, a suitable electrical drive signal from the drive circuitry layer, the heating circuit serves to generate differential thermal expansion and contraction, respectively, such that the actuator is displaced to drive the ink ejection member towards and away from the ink ejection port, the method comprising the steps of: fabricating drive circuitry layers on the substrate with a CMOS fabrication process; depositing a first sacrificial metal layer on the substrate; depositing a heater layer for the heating circuits on the first sacrificial layer and etching the heater layer to form the heating circuits; depositing a resiliently flexible layer of dielectric material on the substrate to cover the heater layer and etching the dielectric layer to form the actuators and the ink ejection members, a gap being provided between the heating circuits and the actuators and the ink ejection members; depositing a second sacrificial layer on

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the substrate to cover the actuators and the ink ejection members and etching the sacrificial layer to define deposition zones for the nozzle chamber walls and the roof walls; depositing a layer of a structural material on the second sacrificial layer to form the nozzle chamber walls and the roof walls; and etching away the sacrificial layers.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Roberts Culbert whose telephone number is (571) 272-1433. The examiner can normally be reached on Monday-Friday (8:30-5:00).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Parviz Hassanzadeh can be reached on (571) 272-1435. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



R. Culbert
Examiner
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Parviz Hassanzadeh
Supervisory Patent Examiner
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